Claims

1.   (Amended) An earthquake prediction method wherein:

telluric current induction field vectors and telluric currents are estimated based on vector differences between observed magnetic field vectors of magnetic fields that are observed within an observation area and

5   a geomagnetic vector; and

change over time of the telluric currents and a state of telluric currents within said observation area are compared and collated with past patterns of change over time of the telluric currents and a state of the telluric currents to estimate a seismofocal zone, time of occurrence, and seismic

10   intensity of a seismic event.

2.   (Amended) An earthquake prediction method according to claim 1, wherein:

a magnetic field noise component at observation points is eliminated from observed magnetic fields;

5   an amount of divergence of a direction of a magnetic fields from a direction of true north at observation points from which said magnetic field noise component has been eliminated is found; and

said telluric current induction field vectors are estimated based on vector differences between observed magnetic field vectors from which

10   said magnetic field noise component has been eliminated and a geomagnetic vector that has been corrected to true north.

3.   (Amended) An earthquake prediction method according to claim 2, wherein:

said estimated telluric current induction field vectors are plotted on a map; and

5   said telluric currents are estimated by both joining points on the map at which geomagnetic abnormalities are recognized and applying Ampere's right-handed screw rule.

4.   (Amended) An earthquake prediction method according to claim 1, wherein:

said estimated telluric current induction fields are plotted on a map; and

5   an area in which said estimated telluric currents are concentrated is estimated to be a seismofocal zone.

5.   (Amended) An earthquake prediction method according to claim 1, wherein:

past data of telluric current induction field intensities of said seismofocal zone that has been estimated in claim 4 are gathered and a

5   telluric current induction field intensity change pattern that indicates change over time is generated; and

this pattern is then compared and collated with past telluric current induction field intensity change patterns that have been stored to estimate said time of occurrence and seismic intensity of a seismic event.

6.   (Amended) An earthquake prediction system that uses the earthquake prediction method according to claim 1; said earthquake prediction system comprising:

mobile telephones or mobile units such as vehicles or ships,

5 each unit carrying:

a magnetic force line sensor for supplying as output magnetic field data that indicate a direction and intensity of lines of magnetic force;

a GPS position detector for receiving radio waves of a GPS satellite and supplying as output position data that indicate position; and

10 a data transmitter for transmitting said data; and

an earthquake prediction center for collecting said data of various points that are transmitted by said mobile units or said mobile telephones that travel within an observation area and then implementing earthquake prediction.

7. (Amended) An earthquake prediction system according to claim 6, said earthquake prediction center comprising:

a data receiver for receiving data that have been transmitted from said mobile telephones or said mobile units by way of a communication

5 network and antenna;

a data storage unit for retaining and storing various data such as map data and data that have been received by said data receiver;

a telluric current induction field estimation unit for estimating telluric current induction fields based on map data and data that have been

10 retained and stored in said data storage unit;

telluric current estimation unit for estimating telluric currents based on said telluric current induction fields that have been estimated;

a telluric current induction field intensity change pattern generation unit for accumulating transitions over time of said telluric current induction field intensities and then generating change patterns; and

an earthquake prediction unit for analyzing said telluric currents that have been estimated and said change patterns of said telluric current induction field intensities to estimate a seismofocal zone, seismic intensity, and time of occurrence of a seismic event.

8. An earthquake prediction system according to claim 6, wherein, when said mobile unit is provided with a car navigation system, position data of said car navigation system is used instead of data from said GPS position detector.

9. An earthquake prediction system according to claim 6, wherein:

said magnetic force line sensor and communication equipment are installed in preselected existing fixed structures within the observation area; and

said communication equipment transmits magnetic field data output of said magnetic force line sensor and information indicating installation positions to said earthquake prediction center by way of an existing communication network.

10. An earthquake prediction system according to claim 6, wherein:

said magnetic force line sensor and GPS position detector are

incorporated in a mobile telephone or a mobile unit; and

5   said mobile telephone uses its own communication capabilities
to transmit observation data to said earthquake prediction center.

11.   An earthquake prediction system according to claim 9, wherein
an acceleration sensor is provided, and said magnetic field data are
transmitted when said acceleration sensor detects earthquake motion.

12.   (Amended) An earthquake prediction system according to
claim 6, wherein an acceleration sensor is provided and said magnetic field
data are transmitted when said acceleration sensor detects a stationary
state of at least a fixed time interval.

13.   (Added) An earthquake prediction method according to claim
2, wherein:

          said magnetic field noise component is change in magnetic
field that is observed at fixed time intervals at a fixed observation point; and

5   said magnetic field noise component is eliminated by analyzing
characteristics of a pattern of this change and then extracting the magnetic
field noise component.

14.   (Added) An earthquake prediction method according to claim
2, wherein said telluric currents are estimated by means of Ampere's right-
handed screw rule based on said estimated telluric current induction field
vectors of a plurality of points.

15.   (Added) An earthquake prediction method according to claim 14, wherein said telluric currents are estimated by means of Ampere's right-handed screw rule based on said estimated telluric current induction field vectors of a plurality of points that form a loop.